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basic imagery interpretation report

Jinxi (Chin-hsi) Naval Research and Development/Training Complex SSM (S)

MISSILE RANGES: NAVAL LAUNCHED FACILITIES

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INSTALLATION OR ACTIVITY NAME	COUNTRY
Jinxi (Chin-hsi) Naval Research and Development/Training Complex SSM	CH

UTM COORDINATES	GEOGRAPHIC COORDINATES
NA	40-41-26N 120-53-09E

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MAP REFERENCE

DMA. USATC, Series 200, Sheet 0289-24, scale 1:200,000

	NEGATION DATE If required
	NA

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ABSTRACT

1. [] This report describes new construction at Jinxi (Chin-hsi) Naval Research and Development/Training Complex SSM in the People's Republic of China (PRC) and summarizes naval weapons testing activity and training observed at the complex from September 1977 to September 1979. Development of a shipborne SAM system (CSA-X-2) and naval guns continued at the complex during the period covered by this report. Refinement of the STYX cruise missile system also continued even though most STYX activity was related to crew training. No developmental activity related to the SLBM system has been seen at the complex since mid-1977.

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2. [] This report updates an NPIC report, [] dated October 1977. It includes a location map, 17 annotated photographs, a perspective drawing, listings of newly constructed facilities, and chronologies of observations of both CSA-X-2- and STYX-associated equipment.

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INTRODUCTION

3. [] Jinxi Naval Research and Development/Training Complex SSM is on the north-west shore of Liaodong (Liao-tung) Bay in the northern portion of the PRC (Figure 1). It is the major naval weapons research and development (R&D) facility in the PRC. In addition to R&D, a significant amount of training related to naval weapons systems is conducted at the complex.

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4. [] Significant new construction has taken place at the complex since September 1977. The greatest amount of new construction took place in 1979, with lesser amounts taking place in late 1977 and in 1978. In the past, new construction has usually presaged new R&D or training programs. While some of the new construction since September 1977 has been related to naval gun testing, most of it will probably support future CSA-X-2 development and training.

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5. [] Developmental testing of the CSA-X-2 SAM system was conducted at the complex in two phases during the reporting period—one in late 1978 and the other in mid-1979. The testing in each phase probably involved the various components of the system and possibly included both shipboard and land-based launches.

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6. [] Training related to the mobile STYX missile system was conducted in three cycles during the reporting period. The most intensive training took place in the late 1978 cycle when two fully equipped mobile STYX battalions, probably making up a regiment, were involved. The late 1977 and mid-1979 cycles were much less complex and apparently did not involve large units. Evidence in the form of deployed launch monitoring equipment suggests that continuing technical refinement of the STYX system is integrated with training launches.

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7. [] A major testing/training phase related to a possible new twin 57mm naval gun system was conducted during 1978. In addition, crew training involving older 37/57mm and 100mm naval guns continued throughout the reporting period.

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BASIC DESCRIPTION

8. [] Changes and activity which have taken place at the complex in the main functional areas since September 1977¹ are described in this report. The main functional areas include the missile launch area (Figure 2), the missile assembly and checkout area (Figure 3), the main R&D support area (Figure 4), the complex support and maintenance area (Figure 5), the administration/support area (Figure 6), and the naval weapons testing/training area (Figure 7).

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CSA-X-2 R&D Activity

9. [] Satellite imagery indicates that two phases of R&D test activity related to the CSA-X-2 SAM system took place in the missile launch area of the complex during the period covered by this report.

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The first phase took place in December 1978 and the second phase took place in July 1979.

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Details of the types of tests conducted during the two phases are unknown, but it is likely that live missile launches took place during both phases.

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First Test Phase

10. Three major indications of the first phase of CSA-X-2 R&D activity were observed on imagery. They included the upgrading of monitoring sites in the launch area (Figure 2 and Table 1); the first-time deployment of the SAM launcher-equipped, Kiangtung-class guided missile frigate (FFG), Unit 1 (Figure 8), to the nearby Huludao (Hu-lu-tao) Naval Base Shipyard and Port Facility in mid-November 1978; and the identification in the launch area of a probable dish antenna (Figure 9), similar to the tracking/guidance radar previously associated with the CSA-X-2 system.

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11. The first indication of impending R&D testing, possibly related to a system other than the STYX system, was the establishment of new monitoring sites in the launch area in October 1978. Three optical trackers of a type not previously seen at Jinxi were deployed to the area. The trackers probably represent an upgraded optical tracking capability for the missile launch area. Mobile electronics equipment, probably telemetry monitoring and/or communications equipment, was also newly deployed to positions in the area. This new disposition of optical trackers and mobile electronics equipment was evidently associated with a new and different type of missile testing since STYX-related activity had ended by early November.

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12. The second indication of upcoming CSA-X-2 tests was the transit of the East Sea Fleet Kiangtung FFG (Unit 1) to Huludao Naval Base in November 1978. The ship was observed at that base. Both PHOTINT and COMINT information indicated that the ship operated from that base in November and December;

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13. The third indication of CSA-X-2 testing was observed. On that date, a probable dish antenna similar in size and appearance to the previously identified CSA-X-2 tracking/guidance radar was mounted on a trailer or low van on a rectangular hardstand to the seaward side of the revetted launch position. At least six instrumentation shelters, a probable FIRE CAN radar, and six support van trucks and trailers were in the R&D/training launch area; all optical trackers and mobile electronics equipment were in position. It seems unlikely that such equipment would have been deployed for any reason other than to monitor a missile launch. It is possible that a launch was conducted from a launcher in the R&D/training launch area or perhaps from the Kiangtung positioned a short distance offshore. Most of the equipment present remained in position.

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Second Test Phase

14. STYX missile testing/training was conducted in the launch area from early May through at least early July 1979. R&D activity related to the CSA-X-2 system was probably underway. Instrumentation shelters and mobile electronics equipment were observed positioned in the missile launch area on partial coverage of that date, and additional mobile electronics equipment was deployed adjacent to the naval gun positions in the naval weapons testing/training area (Figure 10). The equipment near the gun positions consisted of three electronics van trailers and three electronics van trucks as well as six generator trailers. The three van trailers and three van trucks were arranged in a standard pattern routinely observed associated with launches from PRC SSM test complexes. The function of the equipment is most likely telemetry collection. Several other pieces of mobile electronics equipment probably related to CSA-X-2 activity were deployed in the naval weapons testing/training area as they had been during the first test phase (Figure 11). Most of the mobile electronics equipment remained in position.

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15. Probable CSA-X-2 equipment had been moved into the launch area. Equipment present on that date included a possible twin-arm CSA-X-2 launcher, a probable CSA-X-2 tracking/guidance radar, three unidentified pieces of equipment, two instrumentation shelters, a large truck-mounted crane, and several pieces of support equipment (Figure 12). The possible launcher appeared to be similar to those on the Kiangtung FFG, and the radar was similar to the one observed in the same position during the first phase of activity. by that time, the probable CSA-X-2 equipment observed had been removed.

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16. Observations of the Thomson/Atlas precision tracking radar (Figure 11), installed at the complex in late 1977, suggest that the radar might have been involved in the second phase of CSA-X-2 test activity at Jinxi. Observation of the radar on almost every photographic coverage from its installation in November 1977 until mid-July 1979 showed it either in an inactive position pointing slightly downward and inland or pointing toward its probable calibration tower on a nearby hill. In fact, on only two of 35 imaging dates in 20 months (up to July 1979) was the radar observed in any position other than the inactive or calibration position. Then on three of five imaging dates in July and August 1979

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[REDACTED] the radar was observed pointing out to sea. Since those three dates overlapped and closely followed the second phase of CSA-X-2 test activity, it seems that the radar might have been involved in the testing. The primary function of the precision tracking radar at Jinxi (as had been previously speculated) is probably to track CSA-X-2 missiles launched from the missile launch area or from the Kiangtung FFG positioned offshore.

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CSA-X-2 History and Imagery Analyst's Comments

17. [REDACTED] Intelligence community analysts monitoring the CSA-X-2 development program agree that numerous gaps exist in what is known about the program. However, there is a general understanding of how far the program has progressed. It is known that the first Chinese ship to be equipped with SAM launchers, the Kiangtung FFG (Unit 1), was built in Shanghai (Shang-hai) in 1971–1972. During approximately the same time period, a twin-arm launcher similar to the two installed on the Kiangtung FFG was observed in the missile assembly and checkout area at Jinxi. Until late 1975, the Kiangtung FFG with its SAM launchers and the twin-arm launcher seen at Jinxi were the only two indications that the Chinese intended to develop a shipborne SAM. The next observations of CSA-X-2 equipment were in October and November of 1975 at Jinxi. Equipment observed at that time included missiles, a tracked transporter-erector-launcher (TEL), a tracking/guidance radar mounted on a flatbed truck, and several pieces of support equipment. The observation of a tracked TEL at a complex associated in the past entirely with naval weapons development led to the conclusion that the system was being developed as both a land-mobile and a shipborne system. The equipment seen at Jinxi in October and November had been shipped out by 14 December. It is still not known what type of testing was conducted at Jinxi during that time period. There was no photographic evidence that missiles were launched during that test phase. However, such a possibility cannot be ruled out since tracking and monitoring equipment were deployed in the area at the time.

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18. [REDACTED] The same pieces of equipment that had been at Jinxi were next seen in launch area C of Shuangchengzi (Shuang-cheng-tzu) SAM Launch Complex [REDACTED] in August 1976. PHOTINT information indicates that at least four phases of testing were conducted while the system was at Shuangchengzi. Two minor test phases took place—one in mid-May and one in late December 1977. Two major test phases were conducted—one from April through June 1978 and the other from late July into early October 1978. By mid-October, the tests had been completed, and the equipment had been transshipped from the complex.

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19. [REDACTED] It is possible that following the Shuangchengzi tests the CSA-X-2 development program diverged along two separate lines and that refinement of the two systems, shipborne and land-mobile, has begun. At least two factors suggest that the two most recent test phases conducted at Jinxi were related solely to the shipborne version of the system. The first was the absence of the TEL during the portions of the two phases observed on imagery. The second factor was the involvement of the Kiangtung FFG in the phase conducted in November and December 1978.

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20. [REDACTED] Another recent event suggesting that progress has been made with the shipborne version of the CSA-X-2 system was a probable simulated firing of the CSA-X-2 from the Kiangtung in the Hangzhou (Hang-chou) Bay area of the East Sea Fleet [REDACTED] R&D tests from the Kiangtung FFG are expected to continue.

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STYX Missile Training/Testing Activity

21. [REDACTED] STYX-related activity continued at the complex during the period covered by this report. The activity consisted primarily of crew training but also included some continuing missile R&D tests which were apparently integrated with the training launches. The STYX-related activity occurred in three cycles—mid-July to late November 1977, mid-March to early November 1978, and early May through at least mid-August 1979. The primary indication that a training/test cycle is underway is the presence of STYX equipment in the missile launch area. Table 1 contains a listing of all equipment observed in the missile launch area during the reporting period. Another indication of STYX activity is the arrival of new STYX crates at the complex. A discussion of crate arrivals during the reporting period is contained in this section of the report.

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22. [REDACTED] All training/testing activity in the launch area during the reporting period appeared to involve crews of mobile units since only wheeled launchers and other equipment related to the mobile system were seen. The two missile attack boat (PTG) launchers that were in the launch area in 1976 and 1977 had been moved to the missile assembly and checkout area by July 1977.

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23. [REDACTED] The most intensive training activity was conducted from late June through early November 1978 and involved a probable mobile STYX regiment (two complete mobile STYX battalions). The probable regiment with its entire complement of equipment had arrived at the complex [REDACTED] The equipment remained parked on the ramp (Figure 13) in the unidentified support area until it was deployed in a training setup in the missile launch area in June (Figure 14). Training apparently continued through the summer and early fall. [REDACTED] only one battalion remained in the launch area: [REDACTED] the equipment of both battalions had been parked around the new large support building in the main R&D support area (Figure 15). Most of the equipment had been transshipped from the complex prior [REDACTED] when the remaining equipment was observed being loaded onto flatcars for transshipment.

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24. [REDACTED] The 1977 and 1979 training/testing cycles appeared to be much less extensive than the 1978 cycle. During the 1977 and 1979 cycles, only one to two launchers were involved at any given time. Training probably involved individual crews and probably included all phases of training with both simulated and live launches.

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25. [REDACTED] A total of 39 live STYX missile launches could have been conducted during the period that included the three cycles. This figure is based on the numbers of new crates which arrived at the complex prior to and during each cycle. Eighteen new crates (13 type A, two probable type B, and three probable type C) arrived in May and June 1977; 14 (nine probable type A and five probable type B) arrived in early July 1978—13 of those remained in December (Figure 16); and seven (three type A and four type B) arrived in early May 1979.

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26. [REDACTED] Live STYX launches may be assumed to be underway during the periods that launchers and missiles are seen in the R&D/training launch area (Table 1). All launches are probably conducted from the revetted launch position for safety and control considerations in the training environment. For the purpose of training crews in launch procedures, it is likely that dry-run or simulated launches are conducted prior to the live launch; therefore, the observation of a missile in the R&D/training launch area does not necessarily mean that a launch is imminent.

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27. [REDACTED] The best indication that continuing STYX missile R&D is integrated with training launches is the presence of the small, tentlike instrumentation shelters deployed around the revetted launch position. The shelters would not normally be associated with a training launch. They were associated with only the STYX testing/training cycle of 1978. In addition, they were associated with CSA-X-2 R&D in December 1978 and July and August 1979.

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28. [REDACTED] Two optical trackers were always positioned in the control and monitoring area on the hilltop north of the launch position during periods of STYX missile training/test launches. Even when testing is not combined with training, STYX missile launches are probably routinely tracked optically to monitor the attitude of the missile during flight and to monitor target engagement.

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29. [REDACTED] Other STYX-related activity during the reporting period included the removal of rail-mounted STYX launchers and resupply dollies from an outdoor training area possibly into a large new probable training support building (Figure 4) nearby in the main R&D support area. The probable training support building, which has five drive-through bays, was externally complete by December 1977, and the rail-mounted equipment was removed from the nearby outdoor training area in May or June 1978. The building may be designed to house basic familiarization training related to the rail-mounted STYX missile system. Moving the equipment into the building would represent an upgrading of the training function since training could continue year round.

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30. [REDACTED] Basic familiarization training related to the STYX missile system apparently continued at Jinxi Cruise Missile Training Facility [REDACTED] during the period covered by this report. STYX-related equipment, first seen at the facility in late 1976, has been observed routinely in the same areas since that time.

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Naval Gun Testing/Training

31. [REDACTED] Naval gun developmental testing and training continued at the complex during the period covered by this report. A major testing/training phase related to a possible new twin 57mm naval gun system was conducted during 1978. In addition, crew training involving older 37/57mm and 100mm naval guns continued throughout the period on a routine basis.

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32. [REDACTED] Preparations for testing and training involving the possible new 57mm gun system began in late 1976 with expansion and leveling of the area around the two old 130mm gun positions. Construction of two new gun positions was started before May and was completed by August 1977. In addition, one of the old 130mm gun positions was modified to accommodate one of the twin 57mm guns. Each of the two new gun positions is composed of a mounting platform positioned over a concrete-lined pit. The old 130mm position was modified to make it similar to the new positions. Steps were built extending down into the pits from ground level. The construction of pits beneath the positions suggests that a below-deck reload capability might have been tested.

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33. [REDACTED] The three 57mm guns were installed in the new positions and one modified position in late September or early October 1977 (Figure 17). Some initial tests were probably conducted in the latter part of 1977. More intensive testing and possibly training began in early 1978 and continued into September or October 1978. Indications of activity included the presence of vehicles, equipment, and personnel in the area around the guns and the presence of a large T-marker on a hillside adjacent to the gun positions. The purpose of the T-marker was probably to direct aircraft flown against the guns for testing or training in the anti-aircraft role.

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34. [REDACTED] One of the guns was removed from its mounting ring in late October 1978. Even though the gun remained on the hardstand adjacent to the position and the other two guns remained in position, only minimal activity relating to the guns was seen after late October. By 5 July 1979, all three guns had been removed from the area and the testing/training phase had apparently ended.

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REFERENCES

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MAPS OR CHARTS

DMA. US Air Target Chart, Series 200, Sheet 0289-24, scale 1:200,000 (UNCLASSIFIED)

DOCUMENTS

1. NPIC. RCA-17/0004/77. *Chin-hsi SSM R&D Test Complex*, Oct 77 (TOP SECRET RUFF)
2. NSA Cable
3. NSA Cable

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RELATED DOCUMENTS

- NPIC. RCA-17/0002/74, *Chin-hsi SSM R&D Test Complex*, Jan 75 (TOP SECRET RUFF)
- NPIC. SR-021/79, *Indications of Support to Probable CSA-X-2 Test Activity in the Jinxi/Huludao Area in Late 1978*, Apr 79 (TOP SECRET RUFF)

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